temperature observations were made at various depths (samples being collected at the same time), besides many other observations at the surface during the voyage. The readings were exact to one 200th of a degree Centigrade. The results will throw valuable light on the different currents of the Atlantic, especially in the eastern part about the Canaries and Azores and in the domain of the Gulf Stream. Detailed observations with the Ekman current-meter were made in the Straits of Gibraltar and on the submarine slope south of the Azores. In the straits, interesting results were obtained as regards the limit between the upper or eastward-flowing current, and the lower or westward-flowing current, which was found to be at a depth of from 50 to 100 fathoms, according to the tide. The maximum velocity measured was about 5 knots, while velocities of from one to two knots were common, both in the upper and the lower current. By exposing photographic plates at varying depths, information was obtained as to the intensity of light beneath the waters of the Sargasso Sea. The effect of light was clearly observable at 300 fathoms, and in a less degree at 500; but at 900 no influence of light was traceable. Only the blue rays were found to reach as low as 300 fathoms. The biological researches have yielded a rich harvest. Centrifugal action on the samples of water by means of a steam winch revealed the presence, in the warm waters of the Sargasso Sea, of excessively minute pelagic plants, such as escape through the meshes of the finest silk nets. They were found in thousands in each liter of water down to about 50 fathoms, and the observations permitted the vertical distribution of the different species (many of them new) to be determined. These minute organisms belong to the order *Coccolithophoridæ*, the smallest species occurring chiefly in the warm seas, but two were found in some numbers even in the cold water of the Great Newfoundland bank. Deep-sea fishes and others of the larger organisms were obtained by tow-nets and trawls, used at varying depths, from the surface to 2,000 fathoms. Many new species were brought to light, and pelagic fishes were found to exist at all depths, though scarce in the deepest layers. Off the west coast of Ireland, as many as 330 deep-sea fishes were caught in a single haul at 500 fathoms. The fauna at the bottom down to 2,900 fathoms was investigated by a special trawl, but very few species were obtained from the greatest depths. The results of the temperature observations across the Gulf Stream to the south of the Great Banks were so interesting that the homeward route was altered so as to permit further investigations to be made, the visit to Iceland being therefore abandoned.

Nature states that the British Board of Agriculture is understood to have applied to the commissioners appointed under the development act for an annual grant of £50,000 for the purpose of research work in agriculture and for giving technical advice to farmers. A number of agricultural institutions have sent in applications for financial help, but the board and two of the commissioners—Messrs. A. D. Hall and Sydney Webb—are engaged on a comprehensive scheme that shall ensure the best use being made of the present material. The board has appointed a special advisory committee, including the Duke of Devonshire, Lord Reay, Sir Edward Thorpe, Dr. Dobbie, Mr. S. U. Pickering, Professor J. B. Farmer, Lieutenant-Colonel Prain, Drs. Teall, Harmer, MacDougall and Wilson, and Messrs. Davies, Middleton, Staveley-Hill and Stockman to help generally in the work.

UNIVERSITY AND EDUCATIONAL NEWS

MR. JAMES A. PATTEN, of Chicago, has given $200,000 to endow a chair of experimental pathology in the medical school of Northwestern University. Special attention is to be given to the study of tuberculosis and pneumonia.

BY the will of the late Samuel W. Bowne, bequests in stocks and bonds of considerable value are made to Wesleyan University and Dickinson College. Goucher College receives $20,000 and the Drew Theological Seminary $130,000.

Radcliffe College has received from Mrs. Martha T. Fiske Collard a bequest amounting to about $100,000.

Dr. Hans Meyer, of Leipzig, has given 150,000 Marks to the University of Berlin, to establish a chair of colonial geography.

The new administration building of Throop Polytechnic Institute at Pasadena, California, was recently completed at a cost of $160,000, contributed by Pasadena citizens.

The new buildings of the department of practical mechanics, of Purdue University, was dedicated on November 12. These buildings provide facilities for instruction in mechanical drawing, descriptive geometry and shop work. Ground was broken on July 22, 1909, and the completed structure turned over to the university on June 15, 1910. The main building contains 25,000 square feet of floor space; can accommodate at one time 400 students in drawing, and has locker accommodations for 1,200 students. The lecture room seats 300 and there are two class rooms, each having a capacity of 60 students. The shops cover 43,000 square feet of ground and are capable of accommodating a group of 350 students at one time.

DISCUSSION AND CORRESPONDENCE

ERUPTIONS OF KILAUEA

To the Editor of Science: In your issue of September 2, 1910, Professor C. H. Hitchcock says, in his interesting review of Brigham's "Kilauea and Mauna Loa," "It is impossible to learn whether the activities of 1849, 1855 and 1879 in Kilauea were to be regarded as true eruptions. An opinion on this point would be a great help."

On July 2–5, 1855, with one companion, Mr. Rufus A. Lyman, I made my sixteenth and latest (I hope not last) trip to Kilauea. I took full notes on the way, and from these, soon afterward, drew up a somewhat minute account of the tour. That account lies before me, and it thus happens that I can give some information as to the activities of Pele in 1855. I venture to transcribe a part of it, hoping that it may have interest as a matter of careful record—in spite of the observer's youth, and of the fact that he carried no instrument of precision but a magnetic compass. The journal, with some few emendations and a few additions (in brackets) runs as follows:

On the road, July 3, 1855—less than half a mile from the brink of Kilauea. The magnificent cloud which hung over the volcano was now in sight. We noticed that a thin layer of the cloud on the windward side was separated from the main body, and steadily borne a short distance into the teeth of the wind. After this evolution it returned to its own cloud. . . . Before us were the steam-cracks close to the volcano; they emitted scarcely any vapor. At 12 M. we came suddenly upon the brink of the crater. I sat down under a sheltering rock and made these notes: Volcanic action apparently confined to the southwest end of the crater and to its sides (the former position of the Black Ledge). Fresh lava apparently poured over the bottom near the sides. Numerous cones and sources of smoke near the flow of 1832 and near the outer southeast side of the rough basaltic ridge on the southeast side of the crater; also further, toward the large volcanic cone or mound in the southwest end of the crater [Halemaumau] and behind it, where appears to be the chief point of action. The smoke in this locality rises almost entirely from the west side of the large mound, from ten small lateral cones. On the north and northwest sides of the crater, at a long distance from the mounds, are several sources of smoke, but hardly so numerous or so active as on the east and opposite sides. The whole central part of the crater appears to consist of the old lava of many years solidity, and to be entirely cool and unaffected by the action that surrounds it. These notes, penciled in view of the scene, were verified by observations made next day in the crater. The action was apparently and actually more violent than it had been for several years.

The night was bitter cold. Kilauea was magnificent; from the half-ruined hut of the Volcano House sixty fires were visible.

July 4. With two additions to our party, Messrs. F. Macomber and T. Irwin, we went to the sulphur-banks, a quarter mile to the north, and collected a few specimens of sulphur crystals. The "banks" consist of a ridge of clayey earth, about thirty feet high, and twice as broad at the top. From every part of this bank the sulphurous gas arises, leaving its crystallizations in the sides